

**AMENDMENTS TO THE DRAWINGS**

The attached sheet(s) of drawings includes changes to FIG. 6, FIG. 8, FIG. 9, FIG. 10, FIG. 12 and FIG. 13.

Attachment:      Replacement sheet  
                         Annotated sheet showing changes

### **REMARKS**

This amendment is in response to the Official Action dated March 16, 2006. Claims 2-5 have been canceled, claim 1 has been amended, and claims 6-18 have been added; as such claims 1 and 6-18 are now pending in this application. Claims 1, 6 and 18 are independent claims. Reconsideration and allowance is requested in view of the claim amendments and the following remarks.

No new matter has been added by this Amendment. Support for the new claims is found in figures 1, 6, 8, 10, and 11, and the corresponding description in the specification. (See, e.g. ¶37-43 in U.S. Pub. No. 2006/0145779).

#### **Objections to the Specification**

Applicant has amended the specification as requested to overcome the objections with respect to clarity.

With respect to the objection regarding the reference labels. Applicant submits that, as per USPTO policy, like numerals refer to like elements. Therefore, it is not necessary to redundantly redefine each element for each figure, when an element has already been previously described. Accordingly, since each of the elements objected to by the Office Action are described with respect to at least one figure, these labels meet the necessary labeling requirements.

With respect to the objection to the use of the phrase “A and B series” on page 12, line 11, Applicant submits that no amendment is necessary as these labels (A and B) are used to identify the element numerals associated with each branch of the circuit (i.e. elements 11A-15A are associated with branch A and elements 11B-15B are associated with branch B).

The Examiner has objected to the drawings under 37 C.F.R. § 1.83(a). The Examiner alleges that the “Substrate” and “IC bonding” elements in the claims must be shown or the features cancelled from the claims. This objection is respectfully traversed. Further, as Applicant does not

believe that further drawing corrections are necessary, no further drawings corrections have been submitted.

Applicant respectfully submits that all necessary features of the invention set forth in the various claims are already illustrated in the Figures. 35 U.S.C. § 113 only indicates that the Applicants shall furnish a drawing **where necessary for the understanding of the subject matter to be patented.** Applicant believes that further drawings are not necessary to **understand** these aspects of the invention or with regard to the various dependent claims.

Accordingly, Applicant respectfully requests withdrawal of this objection.

35 U.S.C. § 112 Rejections

Claims 1 and 3-5 have been objected to by the examiner under 35 U.S.C. § 112, second paragraph. Applicant submits that these objections are moot with respect to claims 2-5 as these claims have been canceled. With respect to the rejection of claim 1, Applicant submits that the amendments overcome the rejections under 35 U.S.C. § 112, second paragraph.

35 U.S.C. § 102 Rejections

Claim 1 is rejected under 35 USC § 102(b) as being anticipated by Atokawa (U.S. Patent No. 6,414,566). Applicant respectfully traverses this rejection as it applies to amended claim 1, and potentially applies to new claims 6 and 19.

Claim 1 recites: *[a] high frequency circuit characterized by comprising:*

*a plurality of shunt paths including active elements and impedance elements in between a high frequency transmission path and a ground, , said active element being comprised on a field effect transistor serially connected between two capacitors;*

*wherein said plurality of shunt circuits form a parallel resonance circuit of said impedance elements when each of said active elements is ON, and a serial resonance circuit of said impedance elements when each of said active elements is OFF.*

Atokawa discloses a frequency filter operable to reduce bias providing for changes in the frequency characteristics without reducing stability of frequency characteristics. The office action cites to figure 2, comparing diodes D3 and D5 to the “active elements” in claim 1. Diodes D3 and D5 are each part of a shunt-like path. Diode D3 is part of a first shunt path including L3, R3, C30, and D3. Diode D5 is part of a second shunt path including L5, R5, C50, and D5.<sup>1</sup>

With respect to claim 1, Atokawa does not teach or suggest “*a plurality of shunt paths including active elements and impedance elements in between a high frequency transmission path and a ground, said active element being comprised on a field effect transistor serially connected between two capacitors.*”

While Atokawa teaches the use of diodes in shunt-like circuits, Atokawa does not teach or suggest the use of transistors, and particularly does not teach or suggest using a transistor serially connected between two capacitors.

Atokawa therefore fails to teach or suggest various features of independent claim 1. For similar reasons, Atokawa fails to teach or suggest the features of independent claims 6 and 19.

Accordingly, Applicant respectfully requests that the rejection of independent claim 1 under 35 U.S.C. § 102(b) be withdrawn.

Claim 1 is rejected under 35 USC § 102(b) as being anticipated by Harberts *et al.* (U.S. Patent No. 6,014,066). Applicant respectfully traverses this rejection as it applies to amended claim 1, and potentially applies to new claims 6 and 19.

Harberts discloses a single pole double throw RF switch (SPDT), configured as a typical non-reflective shunt switch.<sup>2</sup> An RF signal applied to the input port, IN, is alternatively coupled through a first output port, OUT A, or a second output port, OUT B. Each output path contains two PIN diodes. A first diode connected to the frequency path and ground, while the second diode

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<sup>1</sup> Atokawa, Fig 2

<sup>2</sup> Harberts, Column 10, lines 24-28.

connects to the frequency path and ground in series with a resistor. Each Diode is connected to a section of the frequency path which is isolated using two capacitors. Furthermore, each isolated section includes a shunt formed from an inductor and capacitor.<sup>3</sup> The diodes being separate from the shunts.

With respect to claim 1, Harberts does not teach or suggest “*a plurality of shunt paths including active elements and impedance elements in between a high frequency transmission path and a ground, , said active element being comprised on a field effect transistor serially connected between two capacitors.*”

While Harberts teaches the use of diodes in shunt-like circuits, Harberts does not teach or suggest the use of transistors, and particularly does not teach or suggest using a transistor serially connected between two capacitors.

Harberts therefore fails to teach or suggest various features of independent claim 1. For similar reasons, Harberts fails to teach or suggest the features of independent claims 6 and 19.

Accordingly, Applicant respectfully requests that the rejection of independent claim 1 under 35 U.S.C. § 102(b) be withdrawn.

Claims 1 and 2 are rejected under 35 USC § 102(b) as being anticipated by Tsuneo *et al.* (Japanese Patent Pub. 05-299995). Applicant respectfully traverses this rejection as it applies to amended claim 1, and potentially applies to new claims 6 and 19.

Tsuneo discloses a microwave semiconductor switch, configured as a typical non-reflective shunt switch, including a shunt operable in parallel and in series.<sup>4</sup>

With respect to claim 1, Tsuneo does not teach or suggest “*a plurality of shunt paths including active elements and impedance elements in between a high frequency transmission path*

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<sup>3</sup> Harberts, Column 10, line 65 – Column 11, line 7.

<sup>4</sup> Tsuneo, Figure 6.

*and a ground, said active element being comprised on a field effect transistor serially connected between two capacitors.”*

While Tsuneo teaches the use of transistors is shunt devices, Tsuneo does not teach or suggest the use a transistor serially connected between two capacitors.

Tsuneo therefore fails to teach or suggest various features of independent claim 1. For similar reasons, Tsuneo also fails to teach or suggest the features of independent claims 6 and 19.

Accordingly, Applicant respectfully requests that the rejection of independent claim 1 under 35 U.S.C. § 102(b) be withdrawn.

35 U.S.C. § 103 Rejections

Claims 2-4 have been rejected under 35 U.S.C. § 103 as being unpatentable over Atokawa in view of Weidman (U.S. Patent No. 5,061,911); claims 2-4 have been rejected under 35 U.S.C. § 103 as being unpatentable over Harberts in view of Weidman.

Applicant submits that these rejections are moot in view of cancellation of claims 2-5.

**CONCLUSION**

In view of the above amendment, applicant believes the pending application is in condition for allowance.

Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 18-0013, under Order No. SON-2799 from which the undersigned is authorized to draw.

Dated: June 18, 2007

Respectfully submitted,

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Attachments

Application No. 10/521,147  
Amendment dated June 18, 2007  
Reply to Office Action of March 16, 2007

Docket No.: SON-2799

**REPLACEMENT SHEET**



Application No. 10/521,147  
Amendment dated June 18, 2007  
Reply to Office Action of March 16, 2007

Docket No.: SON-2799

**ANNOTATED SHEET SHOWING CHANGES**



3/7

FIG. 5

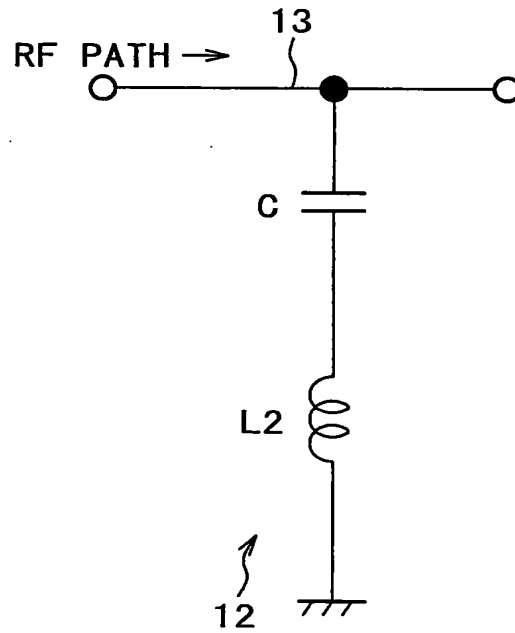


FIG. 6

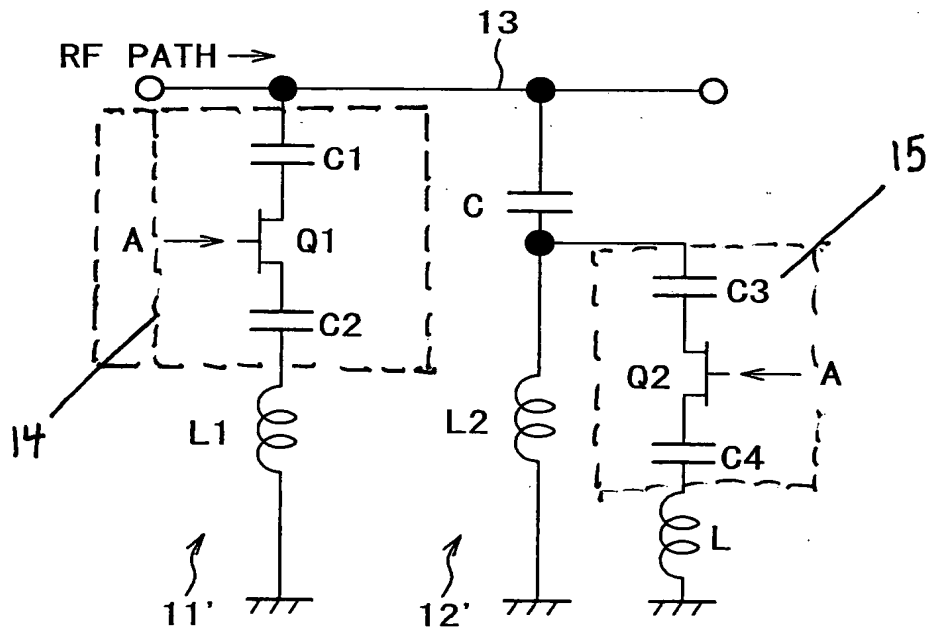




FIG. 7

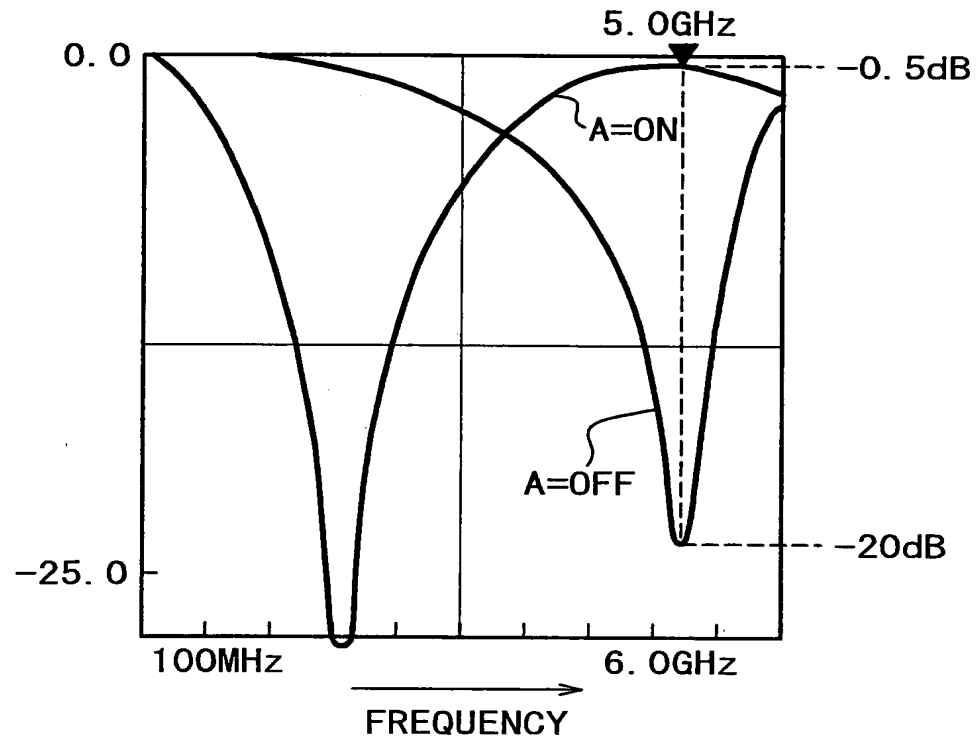
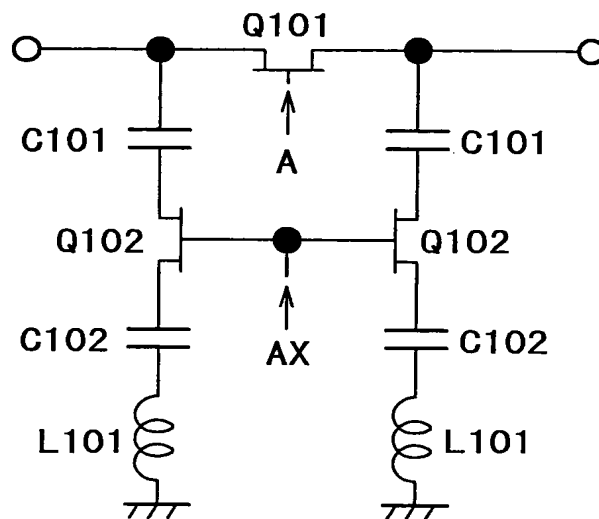


FIG. 8

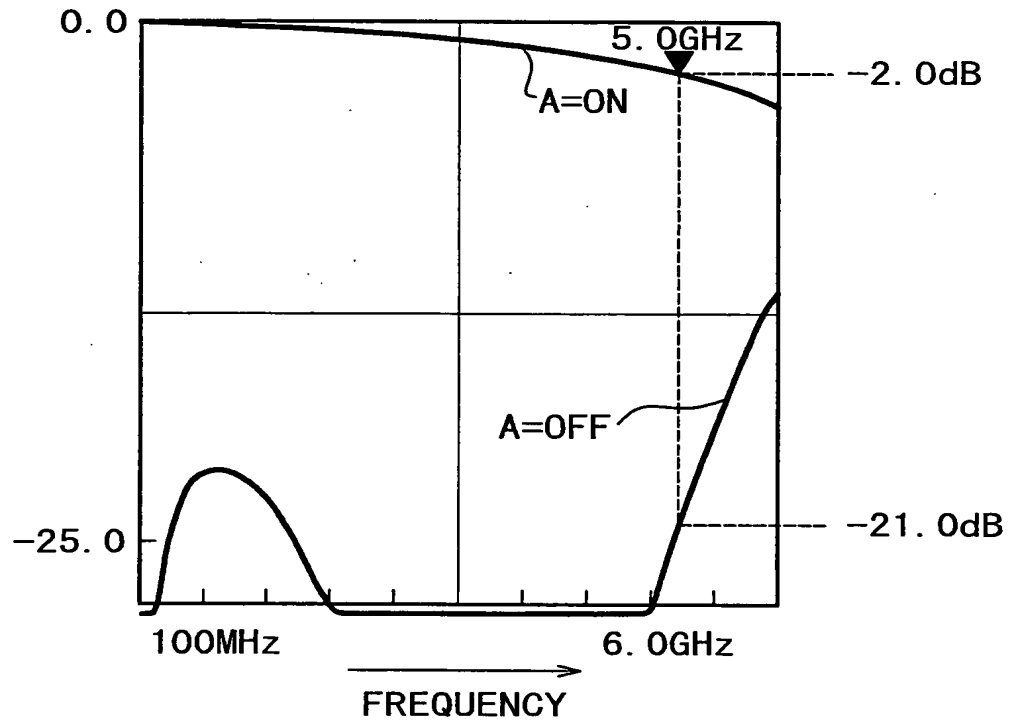


CONVENTIONAL ART



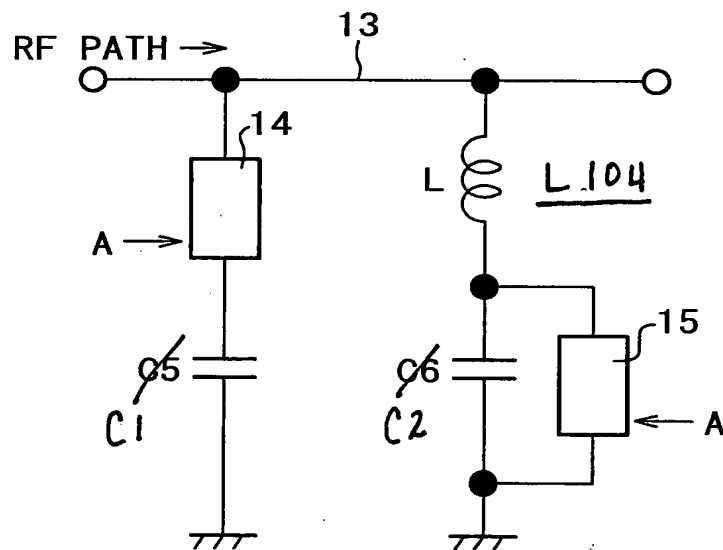
5/7

FIG. 9



CONVENTIONAL ART

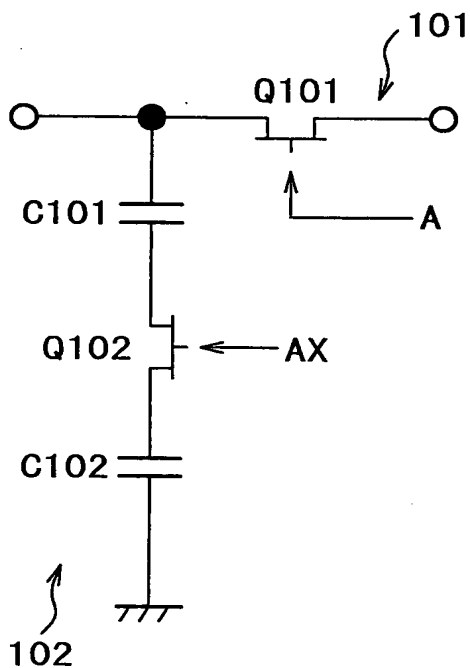
FIG. 10



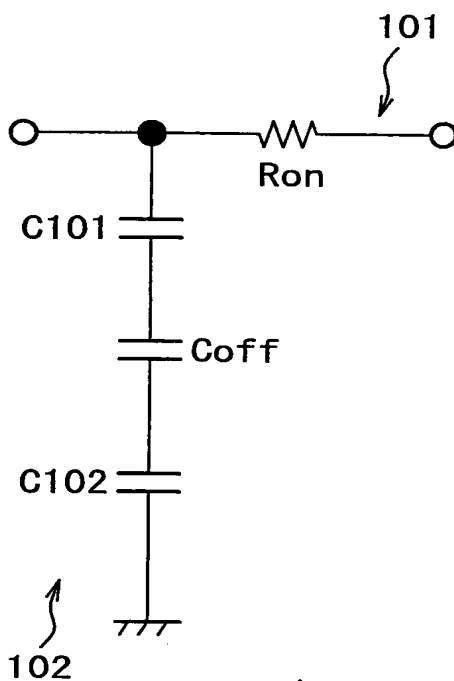


7/7

FIG. 12



CONVENTIONAL ART  
FIG. 13



CONVENTIONAL ART